

# **Fixed-Wing Utility Aircraft (FUA)**

## **(version 2.3)**

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USAACE - Aviation School

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## Table Of Contents

### 1.0 System Description

### 2.0 Target Audience

### 3.0 Assumptions

### 4.0 Training Constraints

### 5.0 System Training Concept

#### 5.1 New Equipment Training Concept (NET)

#### 5.2 Displaced Equipment Training (DET)

#### 5.3 Doctrine and Tactics Training (DTT)

#### 5.4 Training Test Support Package (TTSP)

### 6.0 Institutional Training Domain

#### 6.1 Institutional Training Concept and Strategy

##### 6.1.1 Product Lines

##### 6.1.1.1 Training Information Infrastructure

###### 6.1.1.1.1 Hardware, Software, and Communications

###### Systems

###### 6.1.1.1.2 Storage, Retrieval, and Delivery

###### 6.1.1.1.3 Management Capabilities

###### 6.1.1.1.4 Other Enabling Capabilities

##### 6.1.1.2 Training Products

###### 6.1.1.2.1 Courseware

###### 6.1.1.2.2 Courses

###### 6.1.1.2.3 Training Publications

###### 6.1.1.2.4 Training Support Package (TSP)

##### 6.1.1.3 TADSS

###### 6.1.1.3.1 Training Aids

###### 6.1.1.3.2 Training Devices

###### 6.1.1.3.3 Simulators

###### 6.1.1.3.4 Simulations

###### 6.1.1.3.5 Instrumentation

##### 6.1.1.4 Training Facilities and Land

###### 6.1.1.4.1 Ranges

###### 6.1.1.4.2 Maneuver Training Areas (MTA)

###### 6.1.1.4.3 Classrooms

###### 6.1.1.4.4 CTCs

###### 6.1.1.4.5 Logistics Support Areas

###### 6.1.1.4.6 Mission Training Complex (MTC)

##### 6.1.1.5 Training Services

###### 6.1.1.5.1 Management Support Services

###### 6.1.1.5.2 Acquisition Support Services

###### 6.1.1.5.3 General Support Services

## 6.1.2 Architectures and Standards Component

### 6.1.2.1 Operational View (OV)

### 6.1.2.2 Systems View (SV)

### 6.1.2.3 Technical View (TV)

## 6.1.3 Management, Evaluation, and Resource (MER) Processes

### Component

### 6.1.3.1 Management

#### 6.1.3.1.1 Strategic Planning

#### 6.1.3.1.2 Concept Development and Experimentation

### (CD&E)

#### 6.1.3.1.3 Research and Studies

#### 6.1.3.1.4 Policy and Guidance

#### 6.1.3.1.5 Requirements Generation

#### 6.1.3.1.6 Synchronization

#### 6.1.3.1.7 Joint Training Support

### 6.1.3.2 Evaluation

#### 6.1.3.2.1 Quality Assurance (QA)

#### 6.1.3.2.2 Assessments

#### 6.1.3.2.3 Customer Feedback

#### 6.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)

### 6.1.3.3 Resource

## 7.0 Operational Training Domain

### 7.1 Operational Training Concept and Strategy

#### 7.1.1 Product Lines

#### 7.1.1.1 Training Information Infrastructure

##### 7.1.1.1.1 Hardware, Software, and Communications

### Systems

##### 7.1.1.1.2 Storage, Retrieval, and Delivery

##### 7.1.1.1.3 Management Capabilities

##### 7.1.1.1.4 Other Enabling Capabilities

#### 7.1.1.2 Training Products

##### 7.1.1.2.1 Courseware

##### 7.1.1.2.2 Courses

##### 7.1.1.2.3 Training Publications

##### 7.1.1.2.4 TSP

#### 7.1.1.3 TADSS

##### 7.1.1.3.1 Training Aids

##### 7.1.1.3.2 Training Devices

##### 7.1.1.3.3 Simulators

##### 7.1.1.3.4 Simulations

##### 7.1.1.3.5 Instrumentation

#### 7.1.1.4 Training Facilities and Land

##### 7.1.1.4.1 Ranges

- 7.1.1.4.2 Maneuver Training Areas (MTA)
      - 7.1.1.4.3 Classrooms
      - 7.1.1.4.4 CTCs
      - 7.1.1.4.5 Logistics Support Areas
      - 7.1.1.4.6 Mission Command Training Centers (MCTC)
    - 7.1.1.5 Training Services
      - 7.1.1.5.1 Management Support Services
      - 7.1.1.5.2 Acquisition Support Services
      - 7.1.1.5.3 General Support Services
  - 7.1.2 Architectures and Standards Component
    - 7.1.2.1 Operational View (OV)
    - 7.1.2.2 Systems View (SV)
    - 7.1.2.3 Technical View (TV)
  - 7.1.3 Management, Evaluation, and Resource (MER) Processes
    - 7.1.3.1 Management
      - 7.1.3.1.1 Strategic Planning
      - 7.1.3.1.2 Concept Development and Experimentation
      - 7.1.3.1.3 Research and Studies
      - 7.1.3.1.4 Policy and Guidance
      - 7.1.3.1.5 Requirements Generation
      - 7.1.3.1.6 Synchronization
      - 7.1.3.1.7 Joint Training Support
    - 7.1.3.2 Evaluation
      - 7.1.3.2.1 Quality Assurance (QA)
      - 7.1.3.2.2 Assessments
      - 7.1.3.2.3 Customer Feedback
      - 7.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)
    - 7.1.3.3 Resource Processes
- 8.0 Self-Development Training Domain
  - 8.1 Self-Development Training Concept and Strategy
    - 8.1.1 Product Lines
      - 8.1.1.1 Training Information Infrastructure
        - 8.1.1.1.1 Hardware, Software, and Communications
        - 8.1.1.1.2 Storage, Retrieval, and Delivery
        - 8.1.1.1.3 Management Capabilities
        - 8.1.1.1.4 Other Enabling Capabilities
      - 8.1.1.2 Training Products
        - 8.1.1.2.1 Courseware
        - 8.1.1.2.2 Courses
        - 8.1.1.2.3 Training Publications

- 8.1.1.2.4 Training Support Package (TSP)
- 8.1.1.3 Training Aids, Devices, Simulators and Simulations (TADSS)
  - 8.1.1.3.1 Training Aids
  - 8.1.1.3.2 Training Devices
  - 8.1.1.3.3 Simulators
  - 8.1.1.3.4 Simulations
  - 8.1.1.3.5 Instrumentation
- 8.1.1.4 Training Facilities and Land
  - 8.1.1.4.1 Ranges
  - 8.1.1.4.2 Maneuver Training Areas (MTA)
  - 8.1.1.4.3 Classrooms
  - 8.1.1.4.4 CTCs
  - 8.1.1.4.5 Logistics Support Areas
  - 8.1.1.4.6 Mission Command Training Centers (MCTC)
- 8.1.1.5 Training Services
  - 8.1.1.5.1 Management Support Services
  - 8.1.1.5.2 Acquisition Support Services
  - 8.1.1.5.3 General Support Services
- 8.1.2 Architectures and Standards Component
  - 8.1.2.1 Operational View (OV)
  - 8.1.2.2 Systems View (SV)
  - 8.1.2.3 Technical View (TV)
- 8.1.3 Management, Evaluation, and Resource (MER) Processes Component
  - 8.1.3.1 Management
    - 8.1.3.1.1 Strategic Planning
    - 8.1.3.1.2 Concept Development and Experimentation (CD&E)
    - 8.1.3.1.3 Research and Studies
    - 8.1.3.1.4 Policy and Guidance
    - 8.1.3.1.5 Requirements Generation
    - 8.1.3.1.6 Synchronization
    - 8.1.3.1.7 Joint Training Support
  - 8.1.3.2 Evaluation
    - 8.1.3.2.1 Quality Assurance (QA)
    - 8.1.3.2.2 Assessments
    - 8.1.3.2.3 Customer Feedback
    - 8.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)
  - 8.1.3.3 Resource Processes
- A Milestone Annex
- B References
- C Coordination Annex

This System Training Plan (STRAP) is preliminary.  
Front end analysis (mission, task, job) is ongoing. USAACE - Aviation School will amend and update this STRAP as details solidify.

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## **1.0 System Description**

The Fixed Wing Utility Aircraft (FUA) is a nearly all-weather platform that will facilitate movement of key personnel and equipment across the operational spectrum, in both day and night, utilizing both improved and semi-improved runways. Mission profiles, asymmetric battle lines, and complex terrain will shape airspace and will subject the FUA to a broad range of threats. The FUA will provide air movement of key personnel; support to homeland defense/security operations; support to civil authorities/and Operational Support Airlift (OSA) in support of Major Commands (MACOM) and State requirements by incorporating up to date technologies. The FUA will be a technologically advanced aircraft with Aircraft Survivability Equipment (ASE), civil and military communication, navigation, and surveillance systems allowing world-wide operations.

The Army has a requirement for organic fixed-wing utility aircraft to perform Operational Support Airlift (OSA) missions to provide Army Forces Commanders flexibility in meeting time-sensitive movements of key personnel and equipment. This requirement was re-validated in 2010 as part of the Army's Fixed Wing Aviation Capability Portfolio Review. Service organic OSA is embedded in Joint doctrine as one of the five basic airlift missions and is also recognized in Department of Defense (DoD) Directives and policy. For years the Army has utilized C-12, C-26 and UC-35 fixed-wing utility aircraft to provide commanders with flexibility in meeting key personnel time-sensitive transport requirements.

It is anticipated the Army will continue to operate a mixed fleet medium-range jet powered fixed wing and the FUA to meet operational requirements throughout the full range of military operations. However, the C-12 / C-26 fleet, which comprises the majority of the OSA fleet, is aging and range limited. Increased maintenance costs, combined with required civil and military upgrades which decrease useful payload inhibit operations. In addition, most aircraft are approaching the end of their economic useful life. These factors support the requirement for an aircraft retirement and replacement plan.

In 2011, a Cost-Benefit Analysis (C-BA) was performed in support of the Fixed Wing Utility Aircraft (FUA) Initial Capability Document (ICD). The



FUA C-BA determined that procurement of a new fixed wing utility aircraft provides the best value in the long term and is the only way to fully meet the capability gaps. To avoid the significant cost of pending civil and military equipment upgrades to the current fleet, procurement of new fixed wing utility aircraft should begin no later than 2017.

As current aircraft are retired or attritted, it is imperative that the Army replace them with more technologically advanced aircraft capable of world-wide self-deployment, and of transporting nine (9) personnel with equipment. The replacement aircraft will have defensive capabilities to enhance survivability against hostile forces and enhanced vision systems to enable operations in a wide variety of physical environments and weather conditions.

Procurement of the FUA as a replacement aircraft will not involve growth in force structure. A cost-effective commercial derivative/non-developmental item (NDI) aircraft should be considered to meet Army fixed wing utility aircraft mission requirements. Current aircraft will be replaced as they are retired, due to economic service-life issues, or attrition. Without a modernization effort that continually addresses increased aircraft capabilities and performance, the Army fixed wing utility aircraft will be unable to support the future force.

## 2.0 Target Audience

TARGET AUDIENCE			
Category	Job	Area of Concentration (AOC)  Military Occupational Specialty (MOS)	Functional and Professional Course
Operator			
	Active Army Commissioned Officer	AOC 15A	FUA Qualification
	Reserve Commissioned Officer	AOC 15A	FUA Qualification
	Warrant Officer	155 A, D, E	FUA Qualification
	Instructor Pilot	SQI C	FUA Fixed Wing Instructor Pilot
Additional Information/Requirements:			

Rotary Wing and C-12 U/V Aviator for Initial Qualification

### **3.0 Assumptions**

a. The FUA Integrated Training Program (ITP) will encompass Operator training requirements as applicable.

b. Selected upgrades/replacement to existing contracted simulators and training devices will be required.

c. There will be no additional NCO skill identifiers created as a result of the fielding of the fully modernized FUA. Officer/ Warrant Officer ASI/SQI may be created but will have no impact on manpower increase.

d. The proponent school approved critical individual task list will be used to develop all resident and/or non-resident exportable training materials.

e. FUA transition / qualification for aviators currently fixed wing qualified will need to attend FUA transition / qualification training at the future designated site.

f. FUA qualification training for aviators not fixed wing qualified will need to attend initial fixed wing qualification and then the follow on FUA qualification.

g. To support aircrew training, the Original Equipment Manufacturer (OEM) must provide a Technical Data Package (TDP) suitable and mature to meet Initial Operational Capability (IOC) requirements. The TDP must include at a minimum, Airplane Flight Manual(s), Digital Take-Off and Landing Data (TOLD) Calculator(s) and Pilot Operating Handbook(s) (POHs) with system level operating procedures that will meet threshold metrics for development of TRADOC training material(s).

h. Technical manuals (TMs) are updated by the proponent activity with the assistance of the contractor and the Material Developer (MD), as necessary, to reflect changes to system hardware and software. The United States Army Aviation Center of Excellence (USAACE) Directorate of Training and Doctrine (DOTD) and Directorate of Simulation are responsible for the verification and validation of TMs and TADSS courseware.

i. The Material Developer and / or contractor, with assistance of the proponent, will provide the appropriate initial instructional materials using the Training Development Capabilities (TDC) database.

j. The sustainment strategy is to use Contractor Logistics Support (CLS)

for the life of the system with a contractor providing all services for maintenance, overhaul, and repair. Thus it is understood that there will likely not be the creation of maintainer and support courses for Army Active Component / Reserve Component / National Guard Component (AC/RC/NG) personnel.

#### 4.0 Training Constraints

Constraint Type	Probable Impact	Mitigating Efforts
<b>Budgetary</b> : Institutional, Operational and Self-Development Domains		
Unforeseen training costs.	Quality and availability of training may be affected.	Ensure proper analysis to determine training costs. An accurate training cost determination can be used to implement preventative measures and alternate plans that may reduce overall cost.
<b>Equipment</b> : Institutional Domain		
Prior to full system fielding, there may be a lack of systems (low equipment density) for training at different levels i.e. at the institutional level.	Initial student through-put may be adversely affected.	Develop and maintain close coordination between the appropriate Program Management Offices and the appropriate institutional organizations in order to recognize, mitigate and / or resolve potential student flow issues.

<b>Training Equipment</b> : Institutional, Operational and Self-Development Domains		
As the system ages, TADSS equipment may eventually become outdated or TADSS upgrades may not remain concurrent with system upgrades.	A potential learning obstacle may be imposed on trainees if the relevancy of TADSS decreases to where the TADSS are no longer concurrent.	Create, maintain and continue to revise the plan for TADSS upgrades to facilitate TADSS concurrency with system upgrades throughout the life cycle of the system.
<b>Personnel</b>		
Increase in manpower with the fielding of the system.	No probable impact.	The requirements document clearly states that the fielding of this system will not add additional manpower to the force structure numbers. So as this restriction remains unchanged, there should be no impact.
<b>Facilities</b> : Institutional and Operational Domains		
Lack of training facilities or space shortfalls.	Potential interruptions to training or training	The cost of training should be minimized since the training facilities have been identified

Facility locations.	<p>flow.</p> <p>Facility locations may also affect the cost of training within the Institutional and Operational training domains.</p>	and are currently in place.
<p><b>Human Factors Engineering :</b> Institutional, Operational and Self-Development Domains</p>		
<p>In accordance with the FUA CPD, the material solution for the FUA has been designated to be an existing commercial off the shelf system.</p>	<p>Issues that arise regarding FUA human systems integration will be discovered post initial design and manufacture. This may create additional difficulty in implementing</p>	<p>Careful analysis of the FUA should be done to identify potential system characteristics that may require excessive cognitive, physical, or sensory skills. Identification of such characteristics will assist in determining what tasks are workload intensive, in order to allow training products to be</p>



	potential resolutions.	properly tailored to meet identified training requirements.
<b><i>System Safety</i></b>		
No known constraints.		
<b><i>Doctrine</i></b>		
TBD	TBD	TBD
<b><i>Environmental</i></b>		
No known constraints		
<b><i>Support Services</i></b>		
TBD	TBD	TBD

<i>Command Guidance</i>		
No known constraints		
<i>Soldier Survivability</i>		
TBD	TBD	TBD
<i>Other</i>		
TBD	TBD	TBD
<i>Public Law</i>		
No known constraints.		



## **5.0 System Training Concept**

The United States Army Aviation Center of Excellence (USAACE) will review and approve all contractor developed Army fixed wing utility aircraft training programs IAW established standards (i.e., AR 95-1), practices and procedures using Training and Doctrine Command (TRADOC) Regulation 350-70 as a guide. A comprehensive aircrew training program, meeting both Army and FAA requirements will be established to produce fully-qualified pilots, capable of performing the full-range of FUA missions. The training program will be structured such that it not only meets current requirements but is designed for growth to meet future demands. The contractor will be responsible for providing all personnel and equipment necessary to develop, produce, install, operate, instruct, manage, schedule, and maintain the FUA training program.

The Training Support Package (TSP), for each tier/phase, will be developed concurrently with the system hardware and software, validated during Initial Operational Test and Evaluation (IOT&E), approved by the proponent, and delivered to the proponent seven (7) months prior to training start date for the First Unit Equipped (FUE). All training products will conform to TRADOC Reg 350-70, will be based on the methods described in the Army Learning Model TP 525-8-2 w/C1 06Jun2011 and training modules will be loaded into the Training Development Capability (TDC) database. The Materiel Developer (MD) will provide a multimedia TSP - as applicable - for each Operator, Maintainer and Support (OMS) personnel course referenced in this STRAP. MD will provide Instructor and Key Personnel Training (IKPT) at a specific site TBD. The MD will provide the proponent with the TSP to include cockpit procedural devices for qualification if necessary, when IKPT is completed.

New Equipment Training (NET), Institutional, and Unit sustainment training must be developed IAW TRADOC Reg 350-70, Combined Army Training Strategy, and the FUA Aircrew Training Manual (ATM). OMS personnel training (via NET, Long Distance, resident, unit sustainment, etc.) will be IAW TRADOC Reg 350-70 and the appropriate Soldier Training Publications (STP). The United States Army Aviation Center of Excellence (USAACE) will review and approve all contractor developed Army fixed wing utility aircraft training programs IAW established standards (i.e., AR 95-1), practices and procedures using Training and Doctrine Command (TRADOC) Regulation 350-70 as a guide. A comprehensive aircrew training program, meeting both Army and

FAA requirements will be established to produce fully-qualified pilots, capable of performing the full range of FUA missions. The training program will be structured such that it not only meets current requirements but is designed for growth to meet future demands. The PM, via designated contractor, will be responsible for providing all personnel and equipment necessary to develop, produce, install, operate, instruct, manage, schedule, and maintain the FUA training program.

### **5.1 New Equipment Training Concept (NET)**

**New Equipment Training Concept:** The NET will be provided by the Material Developer (PM Fixed Wing) or designated contractor to government via IKPT with oversight from U.S. Army Aviation Center of Excellence (USAACE) Ft. Rucker, AL. PM Fixed Wing will provide the materials and instructors to conduct NET. Production capacity and fielding issues may necessitate a re-look at the NET implementation strategy. Regardless, the TSP will be used to "train the institutional trainer" and will be the foundation for institutional and unit sustainment training. Support personnel training may be impacted by the fielding of the Fixed Wing Utility Aircraft (FUA). The materiel developer will develop an interactive multimedia NET TSP that will support NET and unit sustainment training for those affected MOSs. The development of NET must be IAW the Training Development Capabilities (TDC) process and TRADOC reg 350-70. The materiel developer must coordinate with the proponent for integration and implementation. The TSP will be developed concurrently with the system hardware and software, validated during Initial Operational Test and Evaluation (IOT&E), approved by the proponent, and delivered to the proponent seven months prior to training start date for the First Unit Equipped (FUE).

**Institutional Training Concept:** The FUA NET TSP left behind after completion of the NET IKPT will be the foundation for institutional training of initial Operator qualification and Instructor Pilot qualification. The NET TSP will also be modified and integrated to the Officer/Warrant Officer Professional Development courses and for NCOES Advanced Leader/Senior Leader courses if applicable.

**Unit Sustainment Training Concept:** As part of NET, the materiel developer will develop and provide an exportable Training Support Package, to include DTT developed by the training developer, which supports the commander's unit training plan for the sustainment training of individual knowledge and skills, and collective training. The training package will include the training materials necessary to provide individual and collective sustainment training for all OMS personnel.

**Active Component (AC) / Reserve Component (RC) / National Guard (NG):** The TRADOC proponent will tailor the NET and Exportable TSP specifically for

the AC/RC/NG as required.

## **5.2 Displaced Equipment Training (DET)**

PM Fixed Wing will resource and coordinate displaced equipment training according to the FUA NET plan for the displaced systems. Per the current FUA fielding plan, a DET may be required as the FUA aircraft replace the C-12, C-26 and UC-35 aircraft.



### **5.3 Doctrine and Tactics Training (DTT)**

DTT is incorporated into the Training Test Support Package (TTSP). DTT shall be performed in conjunction with test player training and NET. As per AR 350-1, the Training Developer shall plan, program, and budget for DTT and the PM shall plan, program and budget for NET. In accordance with TR 350-70, DTT will provide training using methods described the Army Learning Model TP 525-8-2 w/C1 06Jun2011 to operators through senior commanders on how to employ the FUA capabilities. This training provides tactics and techniques presented through battle drills and situational training exercises which embody Army doctrine. The DTT strategy includes how to provide training during fielding and sustainment training and the training proponent must ensure that the DTT strategy provides tactics, techniques, and procedures for operators through senior commanders.

#### 5.4 Training Test Support Package (TTSP)

DOTD, USAACE, will coordinate and integrate developed materials into the Training Test Support Package (TTSP) which will meet or exceed the requirements outlined in TRADOC Reg 350-70 prior to each phase of user testing (UT). The matured TTSP becomes the production TSP which will be the foundation for Institutional, Organizational, and Self-Development training. The TTSP contains the STRAP, test certification plan, training schedule, training data requirements, Mission Training Plan (MTP) change, training aids, devices simulations, training audience description, lesson plan, recommended critical task list, and applicable manuals.

The final TTSP consists of:

- Training schedule for test player personnel. The LPs developed by PM Fixed Wing for the NET TSP will be put in the TDC or the updated TDC database using TDC software provided by the Army Training Support Center (ATSC). This authoring software provides the capability of producing LPs in Microsoft Word. It is also the vehicle by which these same LPs are placed on the Central Army Registry (CAR).
- List of training devices.
- Army training and evaluations program, draft MTP or changes to the MTP.
- Target audience description
- Draft STPs or changes
- Lesson Plans (LP)
- Recommended Critical Task List (CTL)
- Field manuals (FM) or changes to FM's (when not provided with the Doctrine and Organization Test Package).
- User manuals which conform to applicable military and commercial specifications will be validated and verified, prior to initial NET and delivered to the user not later than 90 days prior to first system delivery.
- Doctrine and Tactics Training (DTT) package (if applicable)

## **6.0 Institutional Training Domain**

Institutional FUA training courses for aviators will be taught with oversight from USAACE, in accordance with the Army Campaign Plan. Army Training and Leader Development, through USAACE center and schools, will continue to be the foundation of Army doctrine, initial Fixed Wing training, and Professional Military Education (PME).

## 6.1 Institutional Training Concept and Strategy

Training is developed per the guidance in TRADOC Regulation 350-70 and designed to be safe, battle focused, derived from wartime missions, and based on aviation doctrine. The institutional training design is based upon the concepts of ALC 2015 and the following criteria:

- Instruction is performance oriented, emphasizing hands-on practical exercises, and prepares aviation Soldiers and units to achieve and sustain proficiency of individual and collective tasks. Standards are determined from the Mission Essential Task List (METL), Aircrew Training Manual (ATM), STP and individual critical task analysis. Training will be designed to be sequential by steps/procedures. Institutional and unit training programs capitalize on TADSS technology and other devices that support efficient and effective training.
- Operator training will be designed for all aviators qualifying in the FUA. Initial aircraft qualification will be achieved by successfully completing Initial Entry Fixed Wing (IEFW) course, the FUA Aircraft Qualification Course (AQC); or for those aviators currently Fixed Wing qualified through the FUA Transition Course. Instructor Pilot (IP) training will be completed similarly. Those currently qualified and performing IP duties in another aircraft will be qualified as an FUA IP through a supplemental course or during NET.
- The MD will provide each appropriate school with an objective training system (consisting of the Training Support Package) in time to support institutional training integration. These objective training systems will be the foundation for FUA institutional training of initial OMS MOS qualification and Instructor Pilot qualification. Each school will modify the objective training systems as required to support integration into Officer/Warrant Officer Professional Development and Noncommissioned Officer Education System.

#### **6.1.1 Product Lines**

The Product Lines for the FUA include courseware, courses, training publications and training support packages (TSP). Courseware will focus on the Interactive Courseware (ICW) package developed by the MD. Initial Military Training (IMT) and Professional Military Education (PME) courses will be revised by the proponent and sub-component schools to support the addition of the FUA in current curricula. The training developer will update appropriate training publications. TSPs Supporting individual and collective training will be developed by both the Material Developer and the Training Developer.

The MATDEV and the TNGDEV will use the Army Learning Model to develop the products for a learner-centric environment, supported by an adaptive development and delivery infrastructure that enables career-long learning and sustained adaptation. The focus is to produce leaders and forces which exhibit a high degree of operational adaptability and can think critically and act ethically. The collaborative adult learning environment is non threatening; mistakes can be made as students weigh courses of action and as the facilitator guides the group to recognize better solutions. The model increases rigor and relevance through frequent learner assessments to maintain standards and remediation is applied when needed.

#### **6.1.1.1 Training Information Infrastructure**

The FUA product lines consist of hardware, software, publications, courses, lessons, TSPs, training aids, training facilities and management services that will provide the capabilities that trainers and Soldiers need to train in the institution, operational, and self-development domains. The FUA will interface with the Live, Virtual, Constructive (LVC) gaming environment through the Integrated Training Environment (ITE). ITE is the Army's virtual component of the LVC Integrated Architecture. ITE will develop new hardware and integrate existing hardware and software products to create the Army's common virtual environment (CVE). The objective will be to link system and non-system virtual simulations into a fully integrated training environment. Once developed, the ITE standard components will reduce redundancy and increase realism.

#### **6.1.1.1.1 Hardware, Software, and Communications Systems**

Training will emphasize Distributed Learning (DL). DL packages will be in the form of Interactive Multimedia Instruction (IMI) (non-proprietary being ideal for software and hardware and electronic portable media) capable of being utilized in a variety of electronic media formats. DL packages will also include any procedural or doctrinal changes, and any upgrades or other changes to the training.

#### **6.1.1.1.2 Storage, Retrieval, and Delivery**

Access and storage of FUA training and information will be made available through one or more of the following locations:

- Training Development Capability (TDC) Database
- Army Distribution Learning (DL)
- Army Knowledge Online (AKO)
- The Army Training Network (ATN)
- Central Army Registry (CAR)



#### **6.1.1.1.3 Management Capabilities**

Information and training management capabilities will be aligned with those in the DTMS or other applicable systems utilized by Reserve and National Guard components.

#### **6.1.1.1.4 Other Enabling Capabilities**

Interoperability and data exchange as required by the Key Performance Parameters (KPP) of the FUA Capability Production Document (CPD), and the Training Support System (TSS), will exist with the Army Training Information Architecture (ATIA), the Common Training Instrumentation Architecture (CTIA), and the Live-Virtual-Constructive Integrated Architecture (LVC-IA); to support the primary components of the TSS Training Information Infrastructure (TII). Additionally, the capability for common communications and data exchange operating environment integral to the FUA will be incorporated into the system as appropriate.

#### **6.1.1.2 Training Products**

Institutions will utilize applicable POIs and training publications for FUA. TSPs are provided with the NET and the NET TSPs will be used as a baseline for the development of institutional training. Interactive Courseware (ICW), Computer Based Training (CBT), and Computer Aided Instruction (CAI) will be used to the maximum extent possible. The Materiel Developer will consider exportable Interactive Multimedia Instruction (IMI), DL and train-the-trainer. For the institution there should be adequate IMI and CBT to provide the student load with virtual hands on experience while at the same time reducing the number of real systems required in the school as training devices.

#### **6.1.1.2.1 Courseware**

The PM will develop multimedia FUA TSP (Sharable Content Object Reference Model (SCORM) compliant if applicable as per TR PAM 350-70-12) that can be used to support institutional training at USAACE and individual training. The PM will also be responsible for upgrading the TSP as newer versions of software become available and modifications are made to the FUA. Proposed capability training must be designed to support and sustain the required levels of training readiness by leveraging existing institutional and unit training profiles with the addition of tailored simulation and New Equipment Training (NET). Training shall be assessed through testing, exercises, and operational assessments. As required, existing military training facilities will be modernized to reflect the "proposed capability" unique characteristics and requirements.

Courseware shall be provided in electronic format that is compliant with the latest version of the DoD SCORM. Standard operating Services training processes shall be followed to determine training requirements. These requirements along with the design solution shall be documented in Training Planning Process Methodology (TRPPM) or equivalent Joint program document as determined by Joint Services agreements. The training concept will employ a cost-effective solution consisting of blended capabilities using both dedicated and on-the-job training. Final determination of training requirements will be reflected in the TRPPM (or equivalent program document).

#### 6.1.1.2.2 Courses

[illegible]

Professional Military Education (PME)	
AVIATION CAPTAIN'S CAREER COURSE	2-1-C22
AVIATION WARRANT OFFICER ADVANCED COURSE	2-1-C32
Functional And ASI	
FUA Instructor Pilot Course	TBD

[illegible]




#### **6.1.1.2.3 Training Publications**

The following are examples of Field Manuals, Training Circulars, Technical Manuals, and Soldier Training Publications that are required to support FUA training programs and should be included (If appropriate) in the Multimedia TSP:

Field Manuals/Joint Publications:

FM 2.0 Intelligence and Electronic Warfare Operations; Date TBD

FM 3-XX.XX Security and Support/Generating Force MEDEVAC Mission; Date TBD

FM 3-04.100 Army Aviation Operations; Date TBD

FM 3-04.111 Aviation Brigades; 21 August 03

FM 3-04.113 Utility and Cargo Battalion; Date TBD

FM 3-04.115 Aviation Battalion Task Force; Date TBD

FM 3-04.118 General Support Battalion Operations; Date TBD

FM 3-04.119 Service and Support Helicopter Battalion Operations; Dated TBD

FM 3-04.131 Aviation Headquarters and Headquarters Company; Date TBD

FM 3-04.132 Attack/Reconnaissance Company; Date TBD

FM 3-04.134 Command Aviation Company; Date TBD

FM 3-04.201 Fundamentals of Flight; Date TBD

FM 3-04.202 Environmental Flight; Date TBD

FM 3-04.203 Fundamentals of Flight; Date TBD

FM 3-04.230 Meteorology for Army Aviators; Date TBD

FM 3-04.240 Instrument Flying and Navigation for Army Aviators; Date TBD

FM 3-04.300 Flight Operations and Airfield Management; Date TBD

FM 3-04.301 Aeromedical Training for Flight Personnel; 29 August 00

FM 3-04.400 Aviator's handbook; Date TBD

FM 3-04.402 Aviator's Recognition Manual; Date TBD

FM 3-04.513 Battlefield Recovery and Evacuation of Aircraft; 27 September 00

FM 3-09.3 Tactics, Techniques, and Procedures for Observed Fire; Date TBD

FM 3-11.3 NBC Contamination Avoidance; Date TBD

FM 3-21.60 Visual Signals; Date TBD

FM 3-97.6 Mountain Operations; 28 November 00

FM 7-0 Training for Full Spectrum Operations; 12 December 08

FM 8-10-26 Employment of the Medical Company (Air Ambulance); 16 February 99  
JP 3-26 Joint Doctrine for Homeland Security, Second Draft, dated 11 Sep 03

#### Technical Manuals:

TM 1-1500-328-23 Aeronautical Equipment Maintenance Management Policies and Procedures; 28 February 91

TM 55-1500-342-23 Army Aviation Maintenance Engineering Manual for Weight and Balance; 29 August 86

OEM MANUAL Series Manuals FUA Specific Designation TBD, (To be developed), Date TBD

OEM MANUAL FUA Specific Designations are TBD; (To be developed), Date TBD

OEM/FLIGHT MANUAL OEM Operator's Fixed Wing Flight Manual for FUA, (To be developed), Date TBD

OEM / CHECK-LIST OEM Operator's Checklist for FUA, (To be developed), Date TBD

OEM / MTF MANUAL OEM Maintenance Test Flight Manual for FUA, (To be developed), Date TBD

FUA Aircrew Training Manual; (To be developed), Date TBD



#### **6.1.1.2.4 Training Support Package (TSP)**

The FUA TSP will provide a structured training program that supports individual institutional training and will be integrated into a training exercise. All validated TSPs will be loaded into the Training Development Capability (TDC) database by the MD or their designated contractor. TSPs will contain operator IMI and maintainer IMI if applicable. The Materiel Developer will provide a complete library of available FUA related operators manuals, maintenance manuals, and related training materials.

#### **6.1.1.3 TADSS**

Training Aids, Devices, Simulators, and Simulations (TADSS) will be used to the maximum extent possible and integrated into all appropriate training domains (institutional, operational, and self-development), training environments (live, virtual, constructive (LVC), and gaming), new equipment fielding and training strategies as applicable.

#### **6.1.1.3.1 Training Aids**

Training Aids, Devices, Simulators, and Simulations (TADSS), Interactive Courseware (ICW), Computer Based Training (CBT), and Computer Aided Instruction (CAI) will be used to the maximum extent possible.

FUA training aids will be used to support training. Those aids will be concurrent with fielded systems, provide a means for reducing the training development/training costs and improving efficiency. The FUA training aids will clarify and reinforce information and training. The training aids may include flash cards, flip charts, slides, posters, pictures, transparencies, Video Modification Sets (VISMOS), Graphic Training Aids (GTA), Models (i.e. aircraft components, inert munitions, etc.), maps and overlays, terrain models, equipment and personnel models, viewgraphs, video or voice recordings, etc...

#### **6.1.1.3.2 Training Devices**

Operator Devices: Institutional training aids will include mock-ups, static displays, and diagrams (both printed and computer modeled); as required to teach basic operation of aircraft systems to initial entry fixed wing students. Desktop and cockpit procedural trainers will allow students to practice cockpit procedures, emergency, and navigation skills; that are steps in TRADOC selected critical tasks. The desktop and cockpit procedural trainers must accurately replicate aircraft functionality to preclude negative habit transfer.

#### 6.1.1.3.3 Simulators

##### Operator Simulators:

- Simulators for the institutional training base will continue to be contractor owned and modified as required.
- Individual and crew training accomplished in the designated contract simulators or SFTS will include selected 1000 series base tasks, 2000 series mission tasks and 4000 series maintenance tasks in accordance with (IAW) the FUA Aircrew Training Manual (ATM). These tasks include tasks required for the aircrew to safely and effectively operate the aircraft during the execution of the unit's mission. Crew and individual tasks that the designated contract simulators or SFTS will train include ATM tasks, unit specific Mission Essential Task List (METL) tasks, and unit tasks based on the Unit Task List (UTL).
- If it is later decided that a Fixed Wing Utility Aircraft (FUA) simulator should be designed and constructed for Army use, such simulators shall be designed and constructed to Level D requirements and Flight Simulator Training Devices (FSTDs) to Level 4 requirements in accordance with the Code of Federal Regulations (CFR), Title 14, Part 60. A FUA Synthetic Flight Training System (SFTS) should provide reliable and sustainable training. A SFTS is an effective enabler and cost efficient means of supporting Army war fighting functions of movement and maneuver, intelligence, sustainment, command and control, and protection. The FUA SFTS will train Army Active, Reserve and National Guard component FUA equipped units on selected individual and crew tasks. It should allow FUA qualified aviators to maintain proficiency in high risk tasks, emergency procedures, inadvertent Instrument Meteorological Conditions (IIMC), and in extreme environmental conditions as well as other skills such as flight under instrument flight rules (IFR). These simulators shall have a collimated projected visual system which provides cross cockpit viewing, with a minimum of 180 degrees horizontal field of view (90 degrees per pilot seat operated simultaneously), and must be capable of displaying daylight, dusk, and night visual scenes with sufficient scene content to recognize airport, terrain, and major landmarks around the airport to permit visual flying of a normal traffic pattern and landing maneuver. A transportable FUA SFTS would require minimal integrated logistics support



resources and should remain affordable and sustainable throughout the operations and support lifecycle phase. A FUA SFTS will provide an affordable, modular and standardized single platform that can take the training to the unit thereby, minimizing individual travel and unit disruption of ongoing mission activities. An Interactive, inter-operable SFTS will allow individuals, crews, and units to operate in a simulated environment, reducing the impact of restrictions imposed by terrain, environmental concerns, and time. The FUA SFTS will simulate urban and complex terrain, as well as forest, deserts, farmlands, and over water in tropical, arid, frozen, wet, snow, icing, fog, and dust, both day and night, in both low and clear visibility conditions and high altitudes. The FUA SFTS must also provide an upgradeable, realistic duplication of the applicable Aircraft Survivability Equipment (ASE) suite commonly utilized by FUA. FUA SFTS will not be employed on the battlefield.

#### Maintainer Simulators:

- If it is decided to establish an Army instructed maintainer course and if required, maintenance trainers for the FUA will include Avionics Electrical Trainer (AET), Composite Electrical Trainer (CET), Engine Maintenance Trainer (EMT) and Hydraulic Systems Trainer (HST). The AET is a combined composite trainer, training electrical, and avionics system troubleshooting. The CET allows for training electrical system troubleshooting on the combined electrical systems in the aircraft. All maintenance trainers will allow the instructors to insert faults (opens, shorts, etc.) which allow the students to troubleshoot onboard aircraft systems. The EMT is used to familiarize and instruct Soldiers in the operation, maintenance, and repair of the FUA gas turbine engine. The HST provides a device to train Soldiers to maintain and train Soldiers to maintain and troubleshoot the FUA hydraulic system.

#### **6.1.1.3.4 Simulations**

The 2D and 3D visual representation of the FUA must be reflected in all current inter-operable simulations (i.e. OneSAF, BBS, JANUS, and JCATS) and current/future semi-automated forces (OneSAF, OOS, etc...). FUA source data covering the full operational capability and the logistic requirements must be provided to the National Simulation Center (NSC) for inclusion in all higher level constructive simulations.

#### **6.1.1.3.5 Instrumentation**

The instrumentation that will support the FUA training subsystem will be accomplished through digital, audio, video, hard copy data capture, and take home package preparation and presentation. Any Instrumentation systems must inter-operate with ABCS systems and provide data in a format recognized by the Live, Virtual, Constructive - Integrated Architecture (LVC-IA).

#### **6.1.1.4 Training Facilities and Land**

While the areas of doctrine, training and leader development will be key factors in optimal utilization of new aircraft, each of these areas is not anticipated to have implications that affect existing and future Army facilities. Army facilities need to be capable of supporting new equipment, maintenance and training. The facilities must also support the optimization of systems integration and readiness evaluations. Potential training facilities, i.e. Fixed Wing Army Aviation Training Site (FWAATS), and land to conduct Fixed Wing Utility Aircraft (FUA) training have been identified and are currently in place. Based on reduction in the total number of aircraft no new facilities will be required.

After a designated time period within the integration of the FUA fielding (TBD), it is envisioned that designated portions of FUA training will be hosted at existing training facilities within the oversight of USAACE and within the vicinity of Fort Rucker, AL.

#### **6.1.1.4.1 Ranges**

It is not foreseen that ranges will be necessary for training at the institutional, operational or self-developmental domains.

#### **6.1.1.4.2 Maneuver Training Areas (MTA)**

The FUA will use existing Maneuver Training Areas (MTAs) currently in use for the Fixed Wing aircraft. No additional MTAs should be required to support this upgrade/fielding.

#### **6.1.1.4.3 Classrooms**

Where possible the FUA will use existing classrooms. The staff training estimate in support of the FUA will focus on the most efficient use of existing resources and precisely identify and quantify any expected shortfalls. Sufficient classrooms are required to be available to support operator, maintainer and technician training. These include traditional classrooms, Classroom XXI, digital training facilities, maintenance hangars and maintenance classrooms.

**6.1.1.4.4 CTCs**

Not Applicable



#### **6.1.1.4.5 Logistics Support Areas**

Sufficient facilities are required for use by Contractor Logistics Support Personnel to provide technical support for the operation and maintenance of training systems.

**6.1.1.4.6 Mission Training Complex (MTC)**

Not Applicable

#### **6.1.1.5 Training Services**

The management, acquisition, and support devices that enable the preparation, replication, distribution, and sustainment training will be obtained when required. Some of the considerations that should be reviewed when contracting for training products and for training services include the scope of the training requirement, course control data, instructional materials, devices and equipment to support training, facilities and training environment, instructors and support personnel, and contract management. PM Fixed Wing is responsible for the New Equipment Training Plan (NETP) which implies the following:

- PM Fixed Wing must provide resources for the most cost-effective training program and strategies for leaders, staff, crews, and maintainers (maintainers if applicable). These must be determined as early as possible in the program, and ensure that the training enables those Soldiers to achieve the performance levels required for the FUA and as specified in the requirement documents.

- Funding for training development of FUA equipment and TADSS for training facilities and fielding sites is a PM responsibility. This is IAW AR 350-1.

- PM Fixed Wing, with active participation by the DOTD training developers, will require the contractor to develop or update a complete training system, e.g., institutional training devices, simulators, IKPT, and NET. The system will contain (as a minimum) ETM's, and TSPs and courses (complete with digitized lesson plans, student and instructor guides).

- PM Fixed Wing, with the assistance of the OEM, will provide required training equipment and IKPT prior to the resident training start date as part of the New Equipment Training Plan (NETP) requirement. New Equipment Training (NET) is to be developed and funded by the PM.

#### **6.1.1.5.1 Management Support Services**

Management support services will require contractor logistic support to operate and maintain the equipment.

#### **6.1.1.5.2 Acquisition Support Services**

The Material Developer (MD) will provide continued upgrades to the system.

#### **6.1.1.5.3 General Support Services**

The PM is responsible for coordinating all support and funding for the required general support services throughout the life cycle of the FUA.

#### **6.1.2 Architectures and Standards Component**

Architectures and standards will provide the means to ensure integration and interoperability across product lines to support the Fixed Wing Utility Aircraft (FUA). Architectures are the structure of FUA training components, their relationship, and the principles and guidelines governing their design and evolution over time. They will be the framework that describes missions, organizations, and systems; specifies interfaces and interrelationships amongst its various parts; and facilitates coordination and synchronization with internal and external interfaces. The FUA training subsystem will be integrated into three types of architectures - organization, functional, and systems - each of which may have operational, technical, and systems views. The architecture and standards used to conduct FUA training at USAACE are described in detail in other paragraphs throughout this document.

#### **6.1.2.1 Operational View (OV)**

##### **Missions:**

Wartime - the primary mission of the FUA is to provide Army Forces (ARFOR) commanders with flexibility in meeting time-sensitive movement of key personnel and equipment throughout the worldwide Theater of Operations. Army fixed wing utility units will deploy fixed wing utility aircraft over extended distances to staging bases outside or within a Joint Operations Area (JOA) or Theater of Operations, with the ability to conduct continuous operations throughout the operational environment. The FUA will transport key personnel and equipment over operational/tactical distances to forward-deployed forces. The aircraft will operate as far forward as practicable and must be capable of conducting day/night operations in adverse weather and extreme environmental conditions. The FUA must also be capable of operating from semi-improved runways. Typical payloads will include advance parties, site survey personnel, commanders, staff officers, maintenance technicians, other key specialty personnel, and low density Military Occupational Specialty (MOS) technicians with time-sensitive movement requirements.

Peacetime - the FUA will also support homeland defense, domestic emergency and natural disaster operations. The aircraft will transport key personnel and equipment in support of homeland defense and humanitarian mission requirements. Typical payloads will include key military, state and local personnel from advance elements and/or emergency response teams. Payloads may also include casualties from disaster areas.

Sustainment - maintenance for FUA will be Contract Logistics Support (CLS), in accordance with the current maintenance concept for all Army manned fixed wing aviation platforms. Under full CLS, materiel availability has proven cost effective for low density systems.



#### **6.1.2.2 Systems View (SV)**

Under Development

#### **6.1.2.3 Technical View (TV)**

The FUA will support system-to-system compatibility with:

Common Operating Environment (COE)

Installation Information Infrastructure Architecture (I3A)

Army Training Information Architecture (ATIA)

Standards and specifications for TSS components and subcomponents (e.g., standards and specs for ranges, targetry, classrooms, etc.)

Sharable Content Object Reference Model (SCORM)

### **6.1.3 Management, Evaluation, and Resource (MER) Processes Component**

The TSS Management, Evaluation, and Resource (MER) processes will monitor the health and relevance of the TSS in regards to the FUA training subsystem, establish priorities, and align resources against those priorities. They use FUA issues and feedback from the force to ensure decisions address real concerns from commanders and Soldiers. MER processes will employ best business practices to plan, implement, and sustain the TSS. The processes consider both internal and external drivers that impact TSS and guide the development, maintenance, and sustainment of the TSS.

#### **6.1.3.1 Management**

Where possible the FUA will use existing facilities and support infrastructure. Training development will focus on producing products that are capable of being used in the operational training domain and focused only on ATM tasks. Training will incorporate the maximum use of simulators/simulation to mitigate cost and risk. Students and instructors will be routinely asked to evaluate training events and products to determine how best to improve the quality and efficiency of instruction and training events to provide the best quality training with the least expenditure of resources.

#### **6.1.3.1.1 Strategic Planning**

The Training Developer, Combat Developer, and the Material Developer will continue to plan for sustainment of the training base for the Fixed Wing Utility Aircraft (FUA) based on guidance received or derived from strategic planning documents. The development and fielding of the will support Army Transformation and Training Transformation and will be consistent with the guidance found in:

National Defense strategies

Joint Vision 2020

The Army Plan and other Service plans

Future force documentation

TRADOC supporting plan to the Army Transformation Campaign Plan (ATCP)

TSS Strategic Plan (when published)

TSS Program Strategy Formulation

#### **6.1.3.1.2 Concept Development and Experimentation (CD&E)**

The ARCIC is responsible for chartering Integrated Capability Development Teams (ICDT) to lead joint and Army CD&E efforts throughout TRADOC and in cooperation with non-TRADOC proponents. The charter will synchronize and integrate Army CD&E with joint CD&E, and develop joint concepts and architectures, ICW HQDA, the Joint Staff Functional Capabilities Board (FCB) Working Groups, Joint Forces Command (JFCOM) J9, Northern Command (NORTHCOM), and Strategic Command (STRATCOM).

Provide direction to TRADOC proponents and/or non-TRADOC proponents to establish an ICDT to develop concepts and execute the JCIDS/CIDS process.

Ensure adequate representation from non-TRADOC organizations in these ICDTs.

The following Futures Center chartered ICDT responsibilities include developing concepts, writing concepts and submitting the concepts to the ARCIC (Dir CD&E) for review and approval.

Perform the capabilities based assessment of joint and Army concepts to include conducting Functional Area Analysis (FAA) and forwarding FAA results to the Dir CD&E for validation.

Conduct Functional Needs Analysis (FNA), and forwarding the FNA prioritized list of capability gaps and redundancies to the Dir CD.

Performing the DOTMLPF Analysis for the Functional Systems Analysis (FSA) and forwarding recommended non-material changes, product improvements to existing material of facilities, adoption of interagency, other service, or foreign material solutions, and new material starts to the Dir CD for validation.

Developing ideas for material approaches in coordination with Research, Development, and Engineering Command (RDECOM), Research, Development and Engineering Center (RDEC).

Conducting Analysis of Materials (AMA) and forwarding the AMA prioritized list of material approaches to the Dir CD.

Developing Operational Architecture (OA) products as required by the concept, ICD, CDD, and CPD.

Forwarding OA products to the Dir AIM for validation, integration, and approval and ensuring TRADOC DCSINT approves threats used in concept development and any modeling efforts supporting capabilities developments.

#### **6.1.3.1.3 Research and Studies**

Conduct research and studies that will explore science and technology initiatives for potential FUA training and training support capabilities that can result in high payoffs on the battlefield. The ultimate goal will be to identify opportunities that will improve the training and education process and result in efficiencies in force readiness. The TSS MER processes also ensure training support capabilities are focused and are not stove piped, redundant, or irrelevant.



#### **6.1.3.1.4 Policy and Guidance**

In addition to paragraph 6.1.1.2.3, the documents listed below apply to FUA Institutional Training and use:

- TRADOC Regulations 350-70 Systems Approach to Training Management, Processes, and Products, 6 December 2011.
- TRADOC Regulation 71-20 Concept Development, Experimentation, and Requirements Determination, 6 Oct 2009.
- AR 350-1 Army Training and Leader Development, 19 August 2014.
- AR 350-38 Training Device Policies and Management, 28 March 2013.
- Command Training Guidance
- Doctrine (ADP 7-0, Army Training Network (ATN)).
- AR 73-1 Test and Evaluation Policy, 1 August 2006.
- USAACE 350-70

#### **6.1.3.1.5 Requirements Generation**

This STRAP supports the CPD it accompanies.

#### **6.1.3.1.6 Synchronization**

The fielding of the FUA will be synchronized with the following as applicable:

- Material Fielding Plan
- Material Transfer Plan
- Army Transformation Campaign Plan (ATCP)
- Implementation Plan for Transforming DoD Training
- TADSS distribution plans
- Unit Set Fielding

#### **6.1.3.1.7 Joint Training Support**

The fielding of the FUA Training Support System (TSS) will be synchronized with the following as applicable:

- Joint Knowledge Development and Distribution Capability (JKDDC)
- Joint Assessment and Enabling Capability (JAEC)
- Joint National Training Capability (JNTC)
- Joint Advanced Distributed Learning Co-Labs

#### **6.1.3.2 Evaluation**

The institutional evaluation process will be conducted in accordance with TRADOC 350-70, AR 5-11 and USAACE 350-70.

#### **6.1.3.2.1 Quality Assurance (QA)**

All FUA POI's are inspected for QA in accordance with TRADOC accreditation standards.

#### **6.1.3.2.2 Assessments**

When resources permit and the DOTD has the manpower to support the Post-Fielding Training Effectiveness Analysis (PFTEA) processes, a PFTEA will be conducted not later than 18 months after FUE, with the assistance from the PM Fixed Wing. The analysis will be conducted using a written survey developed by the New Equipment Training Team (NETT) and selected FUA SMEs. The survey will be distributed to units fielded the FUA and will recognize the need for product or training improvements. The analysis includes coordinating the evaluations of POIs, LPs, personnel selection criteria, and Situation Training Exercises (STXs). The NETT analysis, of demonstrated skills by unit personnel provides data for the evaluation. The data collected by the NETT and the results of the analysis will be staffed throughout the DOTD. The PFTEA will recognize the need for product improvements and training improvements if required.

#### **6.1.3.2.3 Customer Feedback**

The following tools will be used to obtain customer feedback which include, those actions that allow for the evaluative and corrective information about the FUA training subsystem and its relevance to the training process:

Surveys

Collaboration

Interviews

Questionnaires

Critiques



#### **6.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)**

Lessons Learned/AARs will be those actions that allow for the collection, analysis, and dissemination of data from a variety of current and historical sources to support efficient and effective FUA Institutional Training operations. Examples of sources of lessons learned include CALL documentation (repositories, newsletters, etc.), AAR take home packages, critiques, etc.

### 6.1.3.3 Resource

Cost Element	Approp	Total (TY\$)	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
<b>TRAINING TOTAL (IKPT, Test Player, and NET - APA Funded)</b>	<b>APA</b>	<b>\$46,331,661.17</b>	\$1,765,214.19	\$979,279.33	\$5,556,416.22	\$6,054,950.98	\$6,195,369.44	\$6,296,906.85
IKPT Total	APA	\$679,071.54	\$679,071.54					
IKPT (Instructor & Key Personnel Training) Simulator and FLT Cost @ Wichita	APA	\$596,771.52	\$596,771.52					
IKPT Flight Cost (Round trip to/from Wichita)	APA	\$4,784.63	\$4,784.63					
IKPT Hotel Cost	APA	\$47,368.75	\$47,368.75					
IKPT Per Diem Cost	APA	\$28,820.24	\$28,820.24					
IKPT Rental Car Cost	APA	\$1,326.41	\$1,326.41					
Test Player Total	APA	\$677,597.64	\$677,597.64					
Test Player Training for OT/LUT Simulator and FLT Cost @ Wichita	APA	\$596,771.52	\$596,771.52					
Test Player Flight Cost (Round trip to/from Wichita)	APA	\$3,310.72	\$3,310.72					
Test Player Hotel Cost	APA	\$47,368.75	\$47,368.75					
Test Player Per Diem Cost	APA	\$28,820.24	\$28,820.24					
Test Player Rental Car Cost	APA	\$1,326.41	\$1,326.41					
NET Total	APA	\$44,974,991.99	\$408,545.01	\$979,279.33	\$5,556,416.22	\$6,054,950.98	\$6,195,369.44	\$6,296,906.85
NET Simulator Cost @ Rucker	APA	\$16,349,729.52	\$153,455.53	\$365,224.17	\$2,022,298.41	\$2,198,451.24	\$2,242,420.27	\$2,287,268.67
NET Simulator Flight Cost (from assigned airfields to Rucker)	APA	\$243,386.29	\$5,768.29	\$16,185.47	\$31,152.60	\$28,158.69	\$48,041.30	\$26,632.15
NET Simulator Hotel Cost (@ Rucker)	APA	\$1,126,043.35	\$10,568.83	\$25,153.83	\$139,280.33	\$151,412.38	\$154,440.62	\$157,529.44
NET Simulator Per Diem Cost (@ Rucker)	APA	\$639,674.02	\$6,003.86	\$14,289.19	\$79,121.29	\$86,013.18	\$87,733.44	\$89,488.11
NET Simulator Rental Car Cost (@ Rucker)	APA	\$1,064,243.68	\$764.01	\$4,242.81	\$127,533.79	\$149,588.13	\$152,579.89	\$155,631.49
NET FLT Cost @ Clarksburg	APA	\$21,799,639.36	\$204,607.38	\$486,965.56	\$2,696,397.88	\$2,931,268.32	\$2,989,893.69	\$3,049,691.56
NET FLT Flight Cost (from Rucker to Clarksburg)	APA	\$233,348.74	\$2,190.17	\$5,212.60	\$28,862.91	\$31,377.02	\$32,004.56	\$32,644.65
NET FLT Hotel Cost	APA	\$1,520,158.52	\$14,267.93	\$33,957.66	\$188,028.44	\$204,406.71	\$208,494.84	\$212,664.74
NET FLT Per Diem Cost	APA	\$858,099.30	\$8,053.96	\$19,168.43	\$106,138.32	\$115,383.53	\$117,691.20	\$120,045.02
NET FLT Rental Car Cost	APA	\$904,607.12	\$649.41	\$3,606.39	\$108,403.72	\$127,149.91	\$129,692.91	\$132,286.77
NET Flight Cost (from Clarksburg back to assigned airfields for AVN units)	APA	\$236,062.10	\$2,215.64	\$5,273.21	\$29,198.53	\$31,741.87	\$32,376.71	\$33,024.24

## **7.0 Operational Training Domain**

The objective of the FUA operational training is unit and individual/crew combat readiness and the development of lethal teams, soldiers, and leaders. Field commanders continue to employ the principles of Army training to train mission-essential tasks at the larger and smaller unit-level. Unit training will be hands-on and standards based. The intent will be to provide leaders, units, and Soldiers with a realistic, operationally relevant training environment that replicates the full spectrum of potential operations.

## **7.1 Operational Training Concept and Strategy**

Unit training will be conducted initially through NET for operators and maintainers when FUA is fielded. All NET training materials will be provided to the unit so that the unit can develop its sustainment training program. Sustainment training shall be designed and developed IAW the appropriate regulations to support sustainment and continuation training for the FUA qualified aircrew personnel worldwide.

It is foreseen that all FUA maintenance will be conducted via designated contract support. If maintenance support should become the responsibility FUA units either Active, Reserve or National Guard, the applicable sustainment training will be IAW TRADOC Reg 350-70 and the appropriate STP. Sustainment training developed will include CBI maximizing the use of an immersive/virtual environment that challenges the student in both maintenance and common skills tasks. The VTE will train Maintenance Operational Checks and Fault Isolation Procedures consisting of Level IV interactive training suitable for entry level Soldiers that will play on wide range of hardware specs, including dual and single monitors. A human interface device/controller other than the standard computer mouse can be made available as an option but will not be required for operation of the training. The content and functionality of the IETM manual will not be duplicated in a stand-alone application; the Practical Exercise will follow the IETM version identified in the exercise. The immersive environment used will provide a 3-dimensional representation of the aircraft that will allow the student to interact in a believable way with the equipment necessary for isolating the simulated equipment. This will provide the best fidelity and allow the student to virtually walk around the aircraft, open panels, manipulate connectors, use simulated troubleshooting test equipment and remove components.

Operator personnel proficiency will be IAW the criteria in the appropriate individual training plan. Collective operator and maintainer skills and proficiency will be trained and sustained through live simulation exercises with other combined arms players whenever possible. However, the lack of combined arms resources and prohibitive OPTEMPO costs, necessitate the need for organizational training using all four enablers of simulation (constructive, virtual, live and gaming); with emphasis on constructive and virtual technology.

Exportable TSPs, ATM, STPs, IMI, training aids, desktop/part-task trainers, procedural trainers, flight simulators, and collective simulation capability are the products that will be available for the commander to train and sustain individual and collective skills.

#### **7.1.1 Product Lines**

The Product Lines for the FUA includes courseware, courses, training publications and training support packages. Courseware will focus on the Interactive Courseware (ICW) package developed by the MD. The training developer will update appropriate training publications. Training Support Packages Supporting individual and collective training will be developed by the Material Developer in coordination with the Training Developer.

#### **7.1.1.1 Training Information Infrastructure**

The FUA will interface with the Live, Virtual, Constructive (LVC) gaming environment through the Integrated Training Environment (ITE). ITE is the Army's virtual component of the LVC Integrated Architecture. ITE will develop and integrate existing products to create the Army's common virtual environment (CVE). The objective will be to link system and non-system virtual simulations into a fully integrated training capability. Once developed, the ITE standard components will reduce redundancy and increase realism.

#### **7.1.1.1.1 Hardware, Software, and Communications Systems**

Training will emphasize Distributed Learning (DL). DL packages will be in the form of Interactive Multimedia Instruction (IMI) nonproprietary software and hardware and electronic portable media capable of being utilized in a variety of electronic media formats. DL packages will also include any procedural or doctrinal changes, and any upgrades or other changes to the training.



#### **7.1.1.1.2 Storage, Retrieval, and Delivery**

Sustainment training will emphasize DL. DL packages will be in the form of electronic portable media and will include any procedural or doctrinal changes and any upgrades or other changes to the training. The MD is responsible for developing DL packages that involve system-specific upgrades and changes along with sustainment DL training. If DL is not yet embedded on the operational equipment, the units must have access to computers with web browser capability which will be used as training tools for all training packages developed. Capabilities that allow for the collection, organization of, and provide access to digital TSS products and information on the FUA will include Distributed Learning (DL) repositories, Video Tele-training (VTT) delivered to the Army through Army Training Network (ATN).

Commanders will ensure the following training management tools are understood and used IAW AR 350-1:

(1) Doctrine for planning and conducting training (ADP 7.0; ADRP 7.0; ATN Unit Training Management tab) and Army-approved software programs for implementing it (for example, the Digital Training Management System (DTMS)).

(2) Army published training strategies for the unit (Combined Arms Training Strategies (CATS) for maneuver training and Army Weapons Strategies/STRAC/DA Pam 350-38 for live-fire training).

#### **7.1.1.1.3 Management Capabilities**

Information and training management capabilities will mirror those of the current FUA. The information systems that allow for the management of digital TSS products and information on the FUA may include Standard Army Training System (SATS)/Unit Training Management Systems (UTMC), Digital Training Management System (DTMS), Learning Management System (LMS), Distributed Learning System, Individual Training Resource Management (ITRM) system, Automated Instructional Management System-Personal Computer (AIMS-PC), Material Army-wide Tracking System (MATS), and Reception Battalion Automated Support System (RECBASS).

#### **7.1.1.1.4 Other Enabling Capabilities**

Interoperability and data exchange as required by the Training Support System (TSS) will exist with the ATIA, the CTIA, and the Live-Virtual-Constructive Integrated Architecture (LVC-IA) to support the primary components of the TSS Training Information Infrastructure (TII). Additionally, the capability for common communications and data exchange operating environment integral to the Brigade Combat Modernization would be incorporated into the system.

#### 7.1.1.2 Training Products

The FUA training subsystem will require upgrades to software, hardware, and databases. TSPs will be delivered by the MD to FUA sites as needed for the life cycle of the system. The MD will develop a SCORM 2004 compliant multimedia TSP compatible with the Army Learning Management System (ALMS) and automation equipment installed in The Army Distance Learning Program (TADLP) Classrooms, classroom XXI, and DISA installed infrastructure.

Training Aides, Devices, Simulators, and Simulations (TADSS), Interactive Courseware (ICW), Computer Based Training (CBT), and Computer Aided Instruction (CAI) will be used to the maximum extent possible.

Operator simulators must have the physical and functional capabilities necessary for individual/crew, and collective combined arms training of selected TRADOC critical tasks to appropriate standard. The cockpit, flight controls, weapons, sensors, Aircraft Survivability Equipment (ASE), communications, and navigation systems of these simulators must accurately replicate, physically and functionally, those of the actual aircraft and its systems to preclude negative habit transfer as determined by fidelity analysis.

- The FUA collective training devices and simulators must have the capability to simulate, with a high degree of fidelity, the functional capabilities but not necessarily with the physical exactness of the FUA as required by the user. Simulator fidelity would enable training of collective tasks, to include multi-ship operations as well as mission rehearsal. The collective training simulators must be capable of training selected collective task to applicable DA standards. Interactive Multimedia Instruction (IMI) should be WEB based enabled and be usable on standard Windows Operating System (Or current hardware language) compatible computers. This capability should support Computer Assisted Instruction (CAI), Computer Based Training (CBT), Interactive Electronic Technical Manual (IETM), individual self-paced instruction as well as formal classroom presentations and foster interaction among students and instructors. At a minimum, IMI will be available via disk.
- FUA models will be updated in constructive and game training to assist non AVN unit staff in unit simulation exercises. System Hardware/Software and/or Components. Specifics are not currently available, however, all software developed for CAI, CBT, IETM, etc. must be useable on Windows compatible computers. Software developed

for simulators are excluded from the Windows compatibility requirement.

#### **7.1.1.2.1 Courseware**

The MD will provide a FUA multi-media TSP (ICW, IMI, or web-based instruction) that can be used to support unit sustainment training and (DL) training. The MD will also be responsible for upgrading the TSP as newer versions of software become available and modifications are made to the FUA.

Proposed capability training must be designed to support and sustain the required levels of training readiness by leveraging existing institutional and unit training profiles with the addition of tailored simulation and New Equipment Training (NET). Training shall be assessed through testing, exercises, and operational assessments. As required, existing military training facilities will be modernized to reflect the "proposed capability" unique characteristics and requirements.

Courseware shall be provided in electronic format that is compliant with the latest version of the DoD SCORM. Standard operating Services training processes shall be followed to determine training requirements. These requirements along with the design solution shall be documented in Training Planning Process Methodology (TRPPM) or equivalent Joint program document as determined by Joint Services agreements. The training concept will employ a cost-effective solution consisting of blended capabilities using both dedicated and on-the-job training. Final determination of training requirements will be reflected in the TRPPM (or equivalent program document).

#### 7.1.1.2.2 Courses

[illegible]

Professional Military Education (PME)	
AVIATION CAPTAIN'S CAREER COURSE	2-1-C22
AVIATION WARRANT OFFICER ADVANCED COURSE	2-1-C32
Functional And ASI	
FUA Instructor Pilot Course	



[illegible]


#### **7.1.1.2.3 Training Publications**

See Para. 6.1.1.2.3

#### **7.1.1.2.4 TSP**

A complete exportable package will be provided with the training products, materials, and information necessary to train the critical tasks to operate, maintain, and support the FUA.

#### **7.1.1.3 TADSS**

See Paragraph 6.1.1.3

#### **7.1.1.3.1 Training Aids**

See Paragraph 6.1.1.3.1

#### **7.1.1.3.2 Training Devices**

See Paragraph 6.1.1.3.2

#### **7.1.1.3.3 Simulators**

See Paragraph 6.1.1.3.3



#### **7.1.1.3.4 Simulations**

See Paragraph 6.1.1.3.4

#### **7.1.1.3.5 Instrumentation**

See Paragraph 6.1.1.3.5

#### **7.1.1.4 Training Facilities and Land**

See Paragraph 6.1.1.4

#### **7.1.1.4.1 Ranges**

See Paragraph 6.1.1.4.1

#### **7.1.1.4.2 Maneuver Training Areas (MTA)**

See Paragraph 6.1.1.4.2

#### **7.1.1.4.3 Classrooms**

See Paragraph 6.1.1.4.3

#### **7.1.1.4.4 CTCs**

See Paragraph 6.1.1.4.4

#### **7.1.1.4.5 Logistics Support Areas**

See Paragraph 6.1.1.4.5



#### **7.1.1.4.6 Mission Command Training Centers (MCTC)**

See Paragraph 6.1.1.4.6

#### **7.1.1.5 Training Services**

See Paragraph 6.1.1.5

#### **7.1.1.5.1 Management Support Services**

See Paragraph 6.1.1.5.1

#### **7.1.1.5.2 Acquisition Support Services**

See Paragraph 6.1.1.5.2

#### **7.1.1.5.3 General Support Services**

See Paragraph 6.1.1.5.3

### **7.1.2 Architectures and Standards Component**

Architectures and standards will provide the means to ensure integration and interoperability across product lines to support the Fixed Wing Utility Aircraft (FUA). Architectures are the structure of FUA training components, their relationship, and the principles and guidelines governing their design and evolution over time. They will be the framework that describes missions, organizations, and systems; specifies interfaces and interrelationships amongst its various parts; and facilitates coordination and synchronization with internal and external interfaces. The FUA training subsystem will be integrated into three types of architectures - organization, functional, and systems - each of which may have operational, technical, and systems views. The architecture and standards used to conduct FUA training at USAACE are described in detail in other paragraphs throughout this document.

#### **7.1.2.1 Operational View (OV)**

##### **Missions:**

Wartime - the primary mission of the FUA is to provide Army Forces (ARFOR) commanders with flexibility in meeting time-sensitive movement of key personnel and equipment throughout the worldwide Theater of Operations. Army fixed wing utility units will deploy fixed wing utility aircraft over extended distances to staging bases outside or within a Joint Operations Area (JOA) or Theater of Operations, with the ability to conduct continuous operations throughout the operational environment. The FUA will transport key personnel and equipment over operational/tactical distances to forward-deployed forces. The aircraft will operate as far forward as practicable and must be capable of conducting day/night operations in adverse weather and extreme environmental conditions. The FUA must also be capable of operating from semi-improved runways. Typical payloads will include advance parties, site survey personnel, commanders, staff officers, maintenance technicians, other key specialty personnel, and low density Military Occupational Specialty (MOS) technicians with time-sensitive movement requirements.

Peacetime - the FUA will also support homeland defense, domestic emergency and natural disaster operations. The aircraft will transport key personnel and equipment in support of homeland defense and humanitarian mission requirements. Typical payloads will include key military, state and local personnel from advance elements and/or emergency response teams. Payloads may also include casualties from disaster areas.

Sustainment - maintenance for FUA will be Contract Logistics Support (CLS), in accordance with the current maintenance concept for all Army manned fixed wing aviation platforms. Under full CLS, materiel availability has proven cost effective for low density systems.

Wartime OMS/MP - the wartime Operational Mode Summaries (OMS) are provided in Tables A and B. The OMS/MPs were developed using TRADOC approved scenarios and lessons learned from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The Mission Profiles (MP) corresponding to these OMS, are provided in Tables I-IV. The MPs vary only by type of airfield and distance and altitude. The wartime flight hours for the FUA aircraft are based on 600 flight hours per aircraft per year and are contained in Table A.

Peacetime OMS/MP - the peacetime flight hours for the FUA aircraft are based on a Flying Hour Program of 540 flight hours per aircraft per year. The peacetime OMS is provided in Table B.4. Environmental conditions. The FUA will operate in climatic conditions as shown in Table C.

**TABLE A**

	FT	OT	DT	CT	Norm	#	Total	Total	Total	Norm
Missions					T/O + Ldg	MNS	FT	OT	CT	T/O + Ldg



1. Self-Deployment to improved runway	9.2	11.8	8.0	19.8	1	4	36.8	47.2	79.2	4
2. Short multi-stop to improved & semi-improved runway	4.8	10.5	2.0	12.5	4	29	139.2	304.5	362.5	116
3. Long Single leg to improved runway	10.0	13.6	2.5	16.1	2	25	250.0	340	402.5	50
4. Multi-stop with mission  reconfiguration to  semi-improved & improved runways	5.8	11.3	2.0	13.3	4	30	174	339	399	120
<b>Totals</b>						88	600	1030.7	1243.2	290

**TABLE B**

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## Mission Profile 1 - Self Deployment

**Task: Self Deploy to Area of Operations**

**Conditions: 2,400 nm, Aircrew of 2 Plus 400 lbs of Additional Equipment,  
Improved Runways**

Event	Flt Time	OT	Payload*	Comments
Preflight/Mission planning		90		
Board/Load		15	400	
Start/run-up checks		15		1 <sup>st</sup> flight of the day
Taxi		10		
Takeoff and climb from A	45	45		Normal takeoff
Cruise	430	430		FL300
Descent and land to B	60	60		
Taxi and shutdown	15	15		
Postflight		30		

<b>TOTALS</b>	9.2 hrs	11.8 hrs.		Mission complete
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\*Payload = 200 lbs. per Passenger and 100 lbs of baggage/equipment

**TABLE C**

<b>Mission Profile 2 - Short Range Multi-Stop</b>				
<b>Task: Short Range Multi-Stop to Improved &amp; Semi-Improved Runway (900 nm)</b>				
<b>Conditions: Total 900 nm, Aircrew of 2, Multi Payload &amp; Additional Equipment</b>				
<b>Event</b>	<b>Flt. Time</b>	<b>OT</b>	<b>Payload*</b>	<b>Comments</b>
Preflight/Mission planning		90		
Board/Load		15	900 lbs	
Start/run-up checks		15		1st flight of the day
Taxi		10		
Takeoff and climb from A	10	20		200nm/FL200

Cruise	30	45		
Descent and land to B	10	20		
Taxi/shutdown	15	15		
Unload		10	-900 lbs	
Load		10	1800 lbs	
Start		5		
Taxi		10		
Takeoff B and cruise low level	20	30		100nm/15,000ft
Descent and land to C	10	10		
Taxi/shutdown	10	10		
Unload	10	10	-1800 lbs	To Semi-Improved Rwy
Load/refuel		45	2700 lbs	
Start		5		

Taxi		15		
Takeoff C and cruise low level	60	60		300nm/FL250
Descent and land to D	10	10		
Taxi/shutdown	10	10		
Unload		10	-2700 lbs	
Load		10	1500 lbs	
Start		5		
Taxi		15		
Takeoff D and cruise low level	60	60		300nm/FL250
Descent and land to E	10	10		
Taxi/shutdown	10	10		
Unload	10	10	-1500 lbs	
Post Flight		30		
<b>TOTALS</b>	4.8 hrs	10.5 hrs		Mission Complete

\*Payload = 200 lbs. per Passenger and 100 lbs of baggage/equipment

#### 7.1.2.2 Systems View (SV)

Under Development

#### **7.1.2.3 Technical View (TV)**

See Paragraph 6.1.2.3



### **7.1.3 Management, Evaluation, and Resource (MER) Processes Component**

The TSS MER processes will monitor the health and relevance of the TSS in regards to the FUA training subsystem, establish priorities, and align resources against those priorities. They use FUA issues and feedback from the force to ensure decisions address real concerns from commanders and Soldiers. MER processes will employ best business practices to plan, implement, and sustain the TSS. The processes consider both internal and external drivers that impact TSS and guide the development, maintenance, and sustainment of the TSS.

#### **7.1.3.1 Management**

Where possible the FUA will use existing facilities and support infrastructure. Training development will focus on producing products that are capable of being used in the operational training domain and focused only on combat critical tasks. Training will incorporate the maximum use of simulators/simulation to mitigate cost and risk. Students and instructors will be routinely asked to evaluate training events and products to determine how best to improve the quality and efficiency of instruction and training events to provide the best quality training with the least expenditure of resources.

#### **7.1.3.1.1 Strategic Planning**

The Training Developer, Combat Developer, and the Material Developer will continue to plan for sustainment of the training base for the Fixed Wing Utility Aircraft (FUA) based on guidance received or derived from strategic planning documents. The development and fielding of the will support Army Transformation and Training Transformation and will be consistent with the guidance found in:

National Defense strategies

Joint Vision 2020

The Army Plan and other Service plans

Future force documentation

TRADOC supporting plan to the Army Transformation Campaign Plan (ATCP)

TSS Strategic Plan (when published)

TSS Program Strategy Formulation

#### **7.1.3.1.2 Concept Development and Experimentation (CD&E)**

The ARCICs is responsible for chartering Integrated Capability Development Teams (ICDT) to lead joint and Army CD&E efforts throughout TRADOC and in cooperation with non-TRADOC proponents. The charter will synchronize and integrate Army CD&E with joint CD&E, and develop joint concepts and architectures, ICW HQDA, the Joint Staff Functional Capabilities Board (FCB) Working Groups, Joint Forces Command (JFCOM) J9, Northern Command (NORTHCOM), and Strategic Command (STRATCOM).

Provide direction to TRADOC proponents and/or non-TRADOC proponents to establish an ICDT to develop concepts and execute the JCIDS/CIDS process.

Ensure adequate representation from non-TRADOC organizations in these ICDTs.

The following Futures Center chartered ICDT responsibilities include developing concepts, writing concepts and submitting the concepts to the ARCIC (Dir CD&E) for review and approval.

Perform the capabilities based assessment of joint and Army concepts to include conducting Functional Area Analysis (FAA) and forwarding FAA results to the Dir CD&E for validation.

Conduct Functional Needs Analysis (FNA), and forwarding the FNA prioritized list of capability gaps and redundancies to the Dir CD.

Performing the DOTMLPF Analysis for the Functional Systems Analysis (FSA) and forwarding recommended non-material changes, product improvements to existing material of facilities, adoption of interagency, other service, or foreign material solutions, and new material starts to the Dir CD for validation.

Developing ideas for material approaches in coordination with Research, Development, and Engineering Command (RDECOM), Research, Development and Engineering Center (RDEC).

Conducting Analysis of Materials (AMA) and forwarding the AMA prioritized list of material approaches to the Dir CD.

Developing Operational Architecture (OA) products as required by the concept, ICD, CDD, and CPD.

Forwarding OA products to the Dir AIM for validation, integration, and approval and ensuring TRADOC DCSINT approves threats used in concept development and any modeling efforts supporting capabilities developments.

#### **7.1.3.1.3 Research and Studies**

Conduct research and studies that will explore science and technology initiatives for potential FUA training and training support capabilities that can result in high payoffs on the battlefield. The ultimate goal will be to identify opportunities that will improve the training and education process and result in efficiencies in force readiness. The TSS MER processes also ensure training support capabilities are focused and are not stove piped, redundant, or irrelevant.

#### **7.1.3.1.4 Policy and Guidance**

In addition to paragraph 7.1.1.2.3, the documents listed below apply to FUA Institutional Training and use:

- TRADOC Regulations 350-70 Systems Approach to Training Management, Processes, and Products, 6 December 2011.
- TRADOC Regulation 71-20 Concept Development, Experimentation, and Requirements Determination, 6 Oct 2009.
- AR 350-1 Army Training and Leader Development, 19 August 2014.
- AR 350-38 Training Device Policies and Management, 28 March 2013.
- Command Training Guidance
- Doctrine (ADP 7-0, Army Training Network (ATN)).
- AR 73-1 Test and Evaluation Policy, 1 August 2006.
- USAACE 350-70

#### **7.1.3.1.5 Requirements Generation**

This STRAP supports the CPD it accompanies.



#### **7.1.3.1.6 Synchronization**

The fielding of the FUA will be synchronized with the following as applicable:

- Material Fielding Plan
- Material Transfer Plan
- Army Transformation Campaign Plan (ATCP)
- Implementation Plan for Transforming DoD Training
- TADSS distribution plans
- Unit Set Fielding

#### **7.1.3.1.7 Joint Training Support**

The fielding of the FUA Training Support System (TSS) will be synchronized with the following as applicable:

- Joint Knowledge Development and Distribution Capability (JKDDC)
- Joint Assessment and Enabling Capability (JAEC)
- Joint National Training Capability (JNTC)
- Joint Advanced Distributed Learning Co-Labs

#### **7.1.3.2 Evaluation**

The same processes will be used as for the institutional domain as they apply to unit training events and with a heavier emphasis on AARs to include capturing training events

#### **7.1.3.2.1 Quality Assurance (QA)**

An Army training/education evaluation and quality-assurance program for the FUA, which apply to the training courses and products, will be accomplished through a systematic collection and analysis of user feedback concerning the effectiveness of training in which these programs will provide a foundation for assessing performance deficiencies and identifying successful initiatives.

The FUA training and training proponents will conduct evaluations to verify that the training development process results in training materials that reflect current doctrine, organizational structures, and material systems. Other QA programs provided by TRADOC, ATSC, Center and proponent schools can be incorporated to evaluate the effectiveness of their training products.

#### **7.1.3.2.2 Assessments**

Assessments will be those actions that make a valuation of the FUA Training Subsystem and its relevance to the training process. Examples of assessment tools include:

Training evaluations and analysis

Monthly status reports

Risk Assessment

Strategic Readiness System

#### **7.1.3.2.3 Customer Feedback**

The following tools will be used to obtain customer feedback which includes those actions that allow for the evaluative and corrective information about the FUA training subsystem and its relevance to the training process:

Electronic media for surveys, help desks, collaboration

Interviews

Questionnaires

Critiques

#### **7.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)**

Lessons learned/AARs will be those actions that allow for the collection, analysis, and dissemination of data from a variety of current and historical sources to support efficient and effective FUA TSS operations. Examples of sources of lessons learned include CALL documentation (repositories, newsletters, etc.), AAR take home packages, critiques, etc.

### 7.1.3.3 Resource Processes

[illegible]



## **8.0 Self-Development Training Domain**

Self-development products will be prepared for common databases, will support reuse with other systems, and will be accessible on U.S. Military network systems worldwide. Training repositories will be reachable from the classrooms, remote locations, hardware platforms, barracks, homes, and business environments. Capabilities will exist to support operator, maintainer, commander, leader, and staff development by providing access and connectivity to all levels of Army and joint knowledge systems. Learning management systems will be available that provide the capability to manage career-paths, determine and plan future training requirements, and track training. The ability to access, retrieve, complete secure, networked testing materials, and receive results will allow students to monitor their progress and access areas of strengths and weaknesses.

### **8.1 Self-Development Training Concept and Strategy**

Training of unit leaders will be accomplished by teaching and sustaining proficiency in individual and collective leader tasks. Live exercises at home station, local training areas, maneuver CTCs, and deployed training sites, will be required to validate proficiency. Training is conducted primarily at platoon through company level, depending on the training objectives of the commander. The commander selects tasks and missions to be trained based on his Mission Essential Task List (METL). Training conditions and standards are based on the appropriate Digital Management Training System (DTMS) and Combined Arms Training Strategy (CATS). The DTMS and CATS will include short and long-range strategies for individual, collective, battle staff, self development, and institutional training.

Recognizing that numerous training options are available within the synthetic training environment, an integrated training strategy describing the use of available Live, Virtual, Constructive (LVC) gaming resources is required. The LVC gaming environment facilitates the use of a "gated" approach to training.

#### **8.1.1 Product Lines**

The product lines will provide the capabilities that trainers and Soldiers need to conduct training in the self-development domain. The FUA product line will require upgrades to training aids, devices, simulators, simulation, software, hardware, and databases at AMCOM sites as needed. Developed and upgraded training aids, devices, simulators, simulation, software, hardware, and databases will be created with Government Purpose Rights.

#### **8.1.1.1 Training Information Infrastructure**

Integrated Training Environment (ITE): The FUA training subsystems will interface with the Live, Virtual, Constructive (LVC) gaming environments through the Integrated Training Environment. Integrated Training Environment (ITE) is the Army's virtual component of the LVC Integrated Architecture. Integrated Training Environment (ITE) will develop new hardware and integrate existing hardware and software products to create the Army's common virtual environment (CVE). The objective will be to link system and non-system virtual simulations into a fully integrated training capability. Once developed, the Integrated Training Environment (ITE) standard components will reduce redundancy and increase realism.

#### **8.1.1.1.1 Hardware, Software, and Communications Systems**

The interconnected local and global network infrastructure will be used for dissemination and delivery of the FUA training support information including: distributed Learning (DL) repositories such as the Army Learning Management System (ALMS), or the Digital Training Management System (DTMS); Video Tele-training (VTT) delivered to the Army through Army Training Network (ATN)

#### **8.1.1.1.2 Storage, Retrieval, and Delivery**

Sustainment training will emphasize DL. DL packages will be in the form of electronic portable media and will include any procedural or doctrinal changes and any upgrades or other changes to the training. The MD is responsible for developing DL packages that involve system-specific upgrades and changes along with sustainment DL training. If DL is not yet embedded on the operational equipment, the units must have access to computers with web browser capability which will be used as training tools for all training packages developed. Capabilities that allow for the collection, organization of, and provide access to digital TSS products and information on the FUA will include Distributed Learning (DL) repositories, Video Tele-training (VTT) delivered to the Army through Army Training Network (ATN).

Commanders will ensure the following training management tools are understood and used IAW AR 350-1:

(1) Doctrine for planning and conducting training (ADP 7.0; ADRP 7.0; ATN Unit Training Management tab) and Army-approved software programs for implementing it (for example, the Digital Training Management System (DTMS)).

(2) Army published training strategies for the unit (Combined Arms Training Strategies (CATS) for maneuver training and Army Weapons Strategies/STRAC/DA Pam 350-38 for live-fire training).

#### **8.1.1.1.3 Management Capabilities**

Information and training management capabilities will mirror those of the current FUA. The information systems that allow for the management of digital TSS products and information on the FUA may include Standard Army Training System (SATS)/Unit Training Management Systems (UTMC), Digital Training Management System (DTMS), Learning Management System (LMS), Distributed Learning System, Individual Training Resource Management (ITRM) system, Automated Instructional Management System-Personal Computer (AIMS-PC), Material Army-wide Tracking System (MATS), and Reception Battalion Automated Support System (RECBASS).

#### **8.1.1.1.4 Other Enabling Capabilities**

Interoperability and data exchange as required by the Training Support System (TSS) will exist with the ATIA, the CTIA, and the Live-Virtual-Constructive Integrated Architecture (LVC-IA) to support the primary components of the TSS Training Information Infrastructure (TII). Additionally, the capability for common communications and data exchange operating environment integral to the Brigade Combat Modernization would be incorporated into the system.



#### **8.1.1.2 Training Products**

The FUA training subsystem will require upgrades to software, hardware, databases, and TSPs will be delivered by the MD to FUA sites as needed for the life cycle of the system.

#### **8.1.1.2.1 Courseware**

The MD will provide a FUA multi-media TSP (ICW, IMI, or web-based instruction) that can be used to support unit sustainment training and (DL) training. The MD will also be responsible for upgrading the TSP as newer versions of software become available and modifications are made to the FUA.

Proposed capability training must be designed to support and sustain the required levels of training readiness by leveraging existing institutional and unit training profiles with the addition of tailored simulation and New Equipment Training (NET). Training shall be assessed through testing, exercises, and operational assessments. As required, existing military training facilities will be modernized to reflect the "proposed capability" unique characteristics and requirements.

Courseware shall be provided in electronic format that is compliant with the latest version of the DoD SCORM. Standard operating Services training processes shall be followed to determine training requirements. These requirements along with the design solution shall be documented in Training Planning Process Methodology (TRPPM) or equivalent Joint program document as determined by Joint Services agreements. The training concept will employ a cost-effective solution consisting of blended capabilities using both dedicated and on-the-job training. Final determination of training requirements will be reflected in the TRPPM (or equivalent program document).

#### **8.1.1.2.2 Courses**

Not Applicable

#### **8.1.1.2.3 Training Publications**

See Para. 6.1.1.2.3

#### **8.1.1.2.4 Training Support Package (TSP)**

A complete exportable package will be provided with the training products, materials, and information necessary to train the critical tasks to operate, maintain, and support the FUA.

#### **8.1.1.3 Training Aids, Devices, Simulators and Simulations (TADSS)**

See Paragraph 6.1.1.3

#### **8.1.1.3.1 Training Aids**

See Paragraph 6.1.1.3.1

#### **8.1.1.3.2 Training Devices**

See Paragraph 6.1.1.3.2



#### **8.1.1.3.3 Simulators**

See Paragraph 6.1.1.3.3

#### **8.1.1.3.4 Simulations**

See Paragraph 6.1.1.3.4

#### **8.1.1.3.5 Instrumentation**

See Paragraph 6.1.1.3.5

#### **8.1.1.4 Training Facilities and Land**

See Paragraph 6.1.1.4

#### **8.1.1.4.1 Ranges**

See Paragraph 6.1.1.4.1

#### **8.1.1.4.2 Maneuver Training Areas (MTA)**

See Paragraph 6.1.1.4.2

#### **8.1.1.4.3 Classrooms**

See Paragraph 6.1.1.4.3

**8.1.1.4.4 CTCs**

Not Applicable



#### **8.1.1.4.5 Logistics Support Areas**

Not Applicable

**8.1.1.4.6 Mission Command Training Centers (MCTC)**

Not Applicable

#### **8.1.1.5 Training Services**

See Paragraph 6.1.1.5

#### **8.1.1.5.1 Management Support Services**

See Paragraph 6.1.1.5.1

#### **8.1.1.5.2 Acquisition Support Services**

Not Applicable

#### **8.1.1.5.3 General Support Services**

See Paragraph 8.1.1.5.3

### **8.1.2 Architectures and Standards Component**

Architectures and standards will provide the means to ensure integration and interoperability across product lines to support the Fixed Wing Utility Aircraft (FUA). Architectures are the structure of FUA training components, their relationship, and the principles and guidelines governing their design and evolution over time. They will be the framework that describes missions, organizations, and systems; specifies interfaces and interrelationships amongst its various parts; and facilitates coordination and synchronization with internal and external interfaces. The FUA training subsystem will be integrated into three types of architectures - organization, functional, and systems - each of which may have operational, technical, and systems views. The architecture and standards used to conduct FUA training at USAACE are described in detail in other paragraphs throughout this document.

#### **8.1.2.1 Operational View (OV)**

Not Applicable



#### **8.1.2.2 Systems View (SV)**

Not Applicable

#### **8.1.2.3 Technical View (TV)**

Not Applicable

### **8.1.3 Management, Evaluation, and Resource (MER) Processes Component**

The TSS MER processes will monitor the health and relevance of the TSS in regards to the FUA training subsystem, establish priorities, and align resources against those priorities. They use FUA issues and feedback from the force to ensure decisions address real concerns from commanders and Soldiers. MER processes will employ best business practices to plan, implement, and sustain the TSS. The processes consider both internal and external drivers that impact TSS and guide the development, maintenance, and sustainment of the TSS.

#### **8.1.3.1 Management**

Where possible the FUA will use existing facilities and support infrastructure. Training development will focus on producing products that are capable of being used in the operational training domain and focused only on combat critical tasks. Training will incorporate the maximum use of simulators/simulation to mitigate cost and risk. Students and instructors will be routinely asked to evaluate training events and products to determine how best to improve the quality and efficiency of instruction and training events to provide the best quality training with the least expenditure of resources.

#### **8.1.3.1.1 Strategic Planning**

Not Applicable

#### 8.1.3.1.2 Concept Development and Experimentation (CD&E)

Not Applicable

#### **8.1.3.1.3 Research and Studies**

Conduct research and studies that will explore science and technology initiatives for potential FUA training and training support capabilities that can result in high payoffs on the battlefield. The ultimate goal will be to identify opportunities that will improve the training and education process and result in efficiencies in force readiness. The TSS MER processes also ensure training support capabilities are focused and are not stove piped, redundant, or irrelevant.

#### **8.1.3.1.4 Policy and Guidance**

In addition to paragraph 8.1.1.2.3, the documents listed below apply to FUA Institutional Training and use:

- TRADOC Regulations 350-70 Systems Approach to Training Management, Processes, and Products, 6 December 2011.
- TRADOC Regulation 71-20 Concept Development, Experimentation, and Requirements Determination, 6 Oct 2009.
- AR 350-1 Army Training and Leader Development, 19 August 2014.
- AR 350-38 Training Device Policies and Management, 28 March 2013.
- Command Training Guidance
- Doctrine (ADP 7-0, Army Training Network (ATN)).
- AR 73-1 Test and Evaluation Policy, 1 August 2006.
- USAACE 350-70



#### **8.1.3.1.5 Requirements Generation**

This STRAP supports the CPD it accompanies.

#### **8.1.3.1.6 Synchronization**

Not Applicable

#### **8.1.3.1.7 Joint Training Support**

The fielding of the FUA Training Support System (TSS) will be synchronized with the following as applicable:

- Joint Knowledge Development and Distribution Capability (JKDDC)
- Joint Assessment and Enabling Capability (JAEC)
- Joint National Training Capability (JNTC)
- Joint Advanced Distributed Learning Co-Labs

#### **8.1.3.2 Evaluation**

The same processes will be used for the institutional domain as they apply to self-developmental training.

#### **8.1.3.2.1 Quality Assurance (QA)**

An Army training/education evaluation and quality-assurance program for the FUA, which apply to the training courses and products, will be accomplished through a systematic collection and analysis of user feedback concerning the effectiveness of training in which these programs will provide a foundation for assessing performance deficiencies and identifying successful initiatives.

The FUA training and training proponents will conduct evaluations to verify that the training development process results in training materials that reflect current doctrine, organizational structures, and material systems. Other QA programs provided by TRADOC, ATSC, Center and proponent schools can be incorporated to evaluate the effectiveness of their training products.

#### **8.1.3.2.2 Assessments**

Assessments will be those actions that make a valuation of the FUA Training Subsystem and its relevance to the training process. Examples of assessment tools include:

Training evaluations and analysis

Monthly status reports

Risk Assessment

Strategic Readiness System

#### **8.1.3.2.3 Customer Feedback**

The following tools will be used to obtain customer feedback which includes those actions that allow for the evaluative and corrective information about the FUA training subsystem and its relevance to the training process:

Electronic media for surveys, help desks, collaboration

Interviews

Questionnaires

Critiques

#### **8.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)**

Lessons learned/AARs will be those actions that allow for the collection, analysis, and dissemination of data from a variety of current and historical sources to support efficient and effective FUA TSS operations. Examples of sources of lessons learned include CALL documentation (repositories, newsletters, etc.), AAR take home packages, critiques, etc.



### 8.1.3.3 Resource Processes

[illegible]

**A Milestone Annex**

<b>TRAINING DEVELOPMENT MILESTONE</b> <b>SCHEDULE - SHEET A</b>		PAGE 1 OF 1 PAGES	REQUIREMENTS CONTROL SYMBOL
Fixed Wing Utility Aircraft (FUA)	ACAT II	ATZQ-TD	AS OF DATE 25 March 2015
POINTS OF CONTACT	NAME	OFFICE SYMBOL	TELEPHONE
MATERIEL COMMAND			
TRADOC PROPONENT	United States Army Aviation Center of Excellence (USAACE)		
TCM	COL Eskrine R. Bentley II		(334)-255-9050
CD:	Mr. Tim McConvery		(334)-255-2167
TD:	CW3 Todd Brackman		(334)-255-9670
ATSC:			

SUPPORTING PROPONENTS:				
ITEM	DATE	RESPONSIBLE AGENCY/POC		TELEPHONE
MNS:				
SMMP:				
MRD:				
ILSMP:				
TTSP:		Fixed Wing Utility Project Office	Mr. Jim Herberg	(256)-313-5588
QQPRI:				
BOIP:		TCM - Lift - Fixed Wing	CW4 Felicia Marlow	(334)-255-2733
NETP:		Fixed Wing Utility Project Office	Mr. Jim Herberg	(256)-313-5588





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**NOTE:** The following table is optional; however, it is useful for populating SHEET B above and provides greater detail for each milestone. If not used, delete from this section before submitting for staffing.

	Individual Training Plan (Per each ITP)	
	Milestone:	Date
	1. Initial Individual Training Plan (ITP) submitted.	
	2. Annotated task list submitted.	
	3. Course Administrative Data (CAD) submitted.	

	4. Training Program Worksheet (TPW) submitted.	
	5. ITP submitted.	
	6. POI submitted.	
	7. Digitized copy archived.	
	8. Resident course start date (NLT 12 months after FUE).	
	Army Correspondence Course Program	
	(Only as a DL portion of a TATS course)	
	Milestone:	Date
	1. Requirement identified and submitted	

	for approval.	
	2. Requirement approved by HQ TRADOC.	
	3. Development initiated.	
	4. Advance breakdown sheet submitted.	
	5. Digitized camera-ready copy (CRC) submitted.	
	6. Subcourse material ready for replication/distribution.	
	Field Manuals (FMs)	
	Milestone:	Date



	1. Requirements identified.	
	2. Draft FM changes validated.	
	3. FM outlines approved.	
	4. FM coordinating draft completed.	
	5. Print/digitization request initiated.	
	6. Approved digitized CRC submitted.	
	7. Replication/distribution completed.	
	Army Training Literature	

	Note: Includes the Soldiers' Manual (SM), Trainers' Guide (TG), and Army Training and Evaluation Program (ARTEP) products.	
	Milestone:	Date
	1. Analysis completed.	
	2. Draft SM, ARTEP MTP, and TG.	
	3. ATSC staffing.	
	4. Digitized/CRC submitted.	
	5. Replication/distribution completed.	
	Interactive Multimedia	

	Instruction (IMI)/Distance Learning	
	Milestone:	Date
	1. Requirements identified and submitted for approval.	
	2. Requirements approved by ATSC and TRADOC.	
	3. Resources identified.	
	4. Courseware developed and validated.	
	5. Master materials to ATSC for replication and distribution.	
	6. Replication/distribution	

	completed.	
	Training Effectiveness Analysis (TEA)	
	(Conducted in-house, by contract, Training Development and Analysis Activity [TDAA], TRADOC Analysis Center [TRAC], or Program Manager [PM])	
	Milestone:	Date
	1. TEA during capabilities development.	
	2. TEA updated for Milestone Decision Review A.	
	3. TEA updated for Milestone Decision Review B.	
	4. TEA updated	

	for Milestone Decision Review C.	
	5. Post-Fielding TEA (PFTEA) planned.	
	Army Visual Information Production and Distribution Program (DAVIPDP)	
	Milestone:	Date
	1. High risk tasks and jobs identified.	
	2. Storyboards validated.	
	3. DAVIPDP requirements submitted to ATSC.	
	4. Requirements	

	approved by DA.	
	5. Production initiated.	
	6. Replication/distribution completed.	
	Training Aids, Devices, Simulators, and Simulations	
	(TADSS)	
	Milestone:	Date
	1. High risk, hard-to-train tasks identified.	
	2. Need for TADSS identified.	

	3. TADSS concept validated.	
	4. TADSS incorporated into the STRAP (part of the CATS).	
	5. Analytical justification using the TEA provided.	
	6. TSS CDD/ CPD developed, if required.	
	7. TADSS effectiveness validated.	
	8. TADSS incorporated into the ICD, CDD, CPD, STRAP	
	9. MOS-specific milestones/requirements for TADSS developed and incorporated in the integrated training strategy (ITS).	

	Training Facilities and Land	
	Milestone:	Date
	1. Range and facility requirements identified.	
	2. Identification of construction requirements completed.	
	3. Construction requirements submitted to MACOM.	
	4. Requirements validated and updated.	
	5. Supporting requirements identified and availability coordinated.	



	<p>6. Installation and other construction requirements submitted to</p> <p>MACOM.</p>	
	<p>7. Refined construction requirements and range criteria forwarded to MACOM, IMA, Chief of Engineers</p>	
	<p>8. Construction initiated.</p>	
	<p>Training Ammunition</p>	
	<p>Milestone:</p>	
	<p>1. Ammunition identified.</p>	

	2. Initial ammunition requirements validated.	
	3. Requirements included in the ORD.	
	4. Ammunition item developed.	
	5. Validation and test completed.	
	6. Ammunition requirements identified in the ITP.	
	7. Requirements provided to installation/MACOM manager.	
	8. Requirements included in DA Pam 350-38.	

	9. Production entered.	
	Training Equipment	
	Milestone	
	1.	
	2.	
	Training Services	
	Milestone	
	1. Contractor Logistic Support	
	2. Contractor NET Support	

	3. Contractor DET Support	
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## **B References**

AR 73-1 Test and Evaluation Policy, 1 August 2006

AR 350-1 Army Training and Leader Development, 19 August 2014

AR 350-38 Training Device Policies and Management, 28 March 2013

TRADOC Regulation 71-20 Concept Development, Experimentation, and Requirements Determination, 6 Oct 2009

TRADOC Regulation 350-70 Systems Approach to Training Management, Processes, and Products, 6 December 2011

USAACE Regulation 350-70

Code of Federal Regulations (CFR), Title 14, Part 60

DoD Instruction 5000.02

Army Learning Model TP 525-8-2 w/C1 06Jun2011 Doctrine

ADP 7-0, Army Training Network (ATN)

TR Pamphlets 350-70- ...1,2,3,4,5,6,7,9,12,13,16

Alternate Format Capability Production Document (CPD) Writer's Guide  
Version 1.2 4 September 2013

Alternate Format Capability Production Document for Fixed Wing Utility  
Aircraft (FUA), 1 October 2014

# C Coordination Annex

Organization/POC (Date)	Summary of Comments Submitted (A/S/C)			Comments Accepted/ Rejected						Rationale for Non-Acceptance - S, C
				Accepted			Rejected			
	A	S	C	A	S	C	A	S	C	
v2.2.2 James E Baker 2015/07/21 - 2015/07/31	Document Accepted As Written			0	0	0	0	0	0	-
v2.2.1 Approvals - Michael P Donohue 2015/07/16 - 2015/07/26	Document Accepted As Written			0	0	0	0	0	0	-
v2.2.1 Approvals - Robert A Story 2015/07/16 - 2015/07/26	Document Accepted As Written			0	0	0	0	0	0	-
v2.2 Army - USAACE - Aviation School 2015/07/06 - 2015/07/14	No Comments Submitted			0	0	0	0	0	0	-
v2.2 Army - ATSC Fielded Devices 2015/07/06 - 2015/07/14	No Comments Submitted			0	0	0	0	0	0	-
v2.2 Army - ATSC 2015/07/06 - 2015/07/14	No Comments Submitted			0	0	0	0	0	0	-
v2.1 Peer - USAACE - Aviation School 2015/06/22 - 2015/07/03	No Comments Submitted			0	0	0	0	0	0	-

v2.1 Peer - TRADOC_ARCIC 2015/06/22 - 2015/07/03	No Comments Submitted	0	0	0	0	0	0	-
v2.1 Peer - ATSC Fielded Devices 2015/06/22 - 2015/07/03	No Comments Submitted	0	0	0	0	0	0	-

<b>Key</b>
Completed Review with Comments
Completed Review, No Comments
Active Review Occurring


ATZQ-TD

JUL 21 2015

MEMORANDUM FOR RECORD

SUBJECT: Approval of the System Training Plan (STRAP) for the Fixed-Wing Utility Aircraft (FUA)

1. Reference: System Training Plan, Fixed-Wing Utility Aircraft (FUA).
2. The STRAP for the Fixed-Wing Utility Aircraft (FUA) is approved. Approved STRAP will be posted to the Central Army Registry (CAR) website:  
<https://atiam.train.army.mil/catalog/catalog/search.htm>
3. The USAACE DOTD POC for this action is Mr. Andrew Lecuyer, 334-255-2584, DSN: (558), email [andrew.b.lecuyer.civ@mail.mil](mailto:andrew.b.lecuyer.civ@mail.mil), U.S. Army Aviation Center of Excellence, ATTN: ATZQ-TDT-N, Fort Rucker, AL 36362-5202.

  
JAMES E. BAKER, JR.  
Colonel, Aviation  
Director of Training and Doctrine

FUA Approval